

SEQUENCE LISTING

STRADO	
<110> KIKUCHI, YASUFUMI	
UNO, SHINSUKE KINOSHITA, YASUKO	
IIJIMA, SHIGEYUKI	
FUKUSHIMA, NAOSHI	
TSUCHIYA, MASAYUKI	
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gtc cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag
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Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
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Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
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Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
gag aag ttc aag gac aga gtc acg atg acc cgg gac acg tcc acg agc
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Glu Lys Phe Lys Asp Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser
aca gtc tac atg gag ttg agc agt ctc aga tct gag gac acg gcc gtc
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Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
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Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln
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Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
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Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
gcc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt
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Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
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gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat
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Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
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gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc acg agc
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tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa
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Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln
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Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
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gtc cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag
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Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
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gcc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt
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Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
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Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys
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Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
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acc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt
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Thr Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat
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Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc acg agc
                                                                      288
Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Thr Ser
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Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val
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tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa
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Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln
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Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
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Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
acc aac cat gtt att cac tgg ctg cga cag gcc cct gga caa ggg ctt
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Thr Asn His Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu
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gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat
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Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc atc agc
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Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser
aca gcc tac atg gag ttg agc agt ctc aga tct gac gac acg gcc gtc
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Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val
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tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa
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Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln
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-20
                                         -10
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ctt gtg cac agt aat gga aag acc tat tta cat tgg ttt cag cag agg
                                                                      192
Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Gln Gln Arg
                        35
cca ggc caa tct cca agg ctc cta att tat aaa gtt tcc aac cga ttt
                                                                      240
Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe
tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc
                                                                      288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat tac
                                                                      336
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
                                85
tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag
                                                                      384
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys
                            100
                                                                      412
ctg gag atc aaa cgtgagtgga tccgcg
Leu Glu Ile Lys
   110
<210> 41
<211> 39
<212> DNA
<213> Artificial Sequence
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<220>

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gaggatgttg gagtttattt ctgctctcaa agtacacat
<210> 42
<211> 18
<212> DNA
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<223> Description of Artificial Sequence: Synthetic oligonucleotide
<400> 42
ataaactcca acatcctc
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<210> 43
<211> 412
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic plasmid
      polynucleotide
<220>
<221> sig_peptide
<222> (1)..(60)
<220>
<221> CDS
<222> (1)..(396)
<220>
<221> mat_peptide
<222> (61)..(396)
<400> 43
atg agg etc cet get eag etc etg ggg etg eta atg etc tgg gte eca
                                                                        48
Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
-20
                    -15
                                         -10
ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc
                                                                       96
Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
            -1 1
gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc
                                                                      144
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
        15
                             20
ctt gtg cac agt aat gga aag acc tat tta cat tgg ttt cag cag agg
                                                                      192
Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Gln Gln Arg
    30
                        35
cca ggc caa tct cca agg cgc cta att tat aaa gtt tcc aac cga ttt
                                                                       240
Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe
45
```

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288
tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                65
                                                                       336
aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat ttc
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Phe
                                                     90
            80
                                 85
                                                                       384
tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys
        95
                            100
                                                                       412
ctg gag atc aaa cgtgagtgga tccgcg
Leu Glu Ile Lys
    110
<210> 44
<211> 39
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
                                                                        39
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<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
<400> 45
                                                                        20
ccaatgtaaa taggtctttc
<210> 46
<211> 412
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic plasmid
      polynucleotide
<220>
<221> sig_peptide
<222> (1)..(60)
<220>
<221> CDS
<222> (1)..(396)
<220>
<221> mat_peptide
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Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc
                                                                       96
Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
            -1 1
gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc
                                                                      144
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
        15
                            20
ctt gtg cac agt aat gga aag acc tat tta cat tgg tac cag cag agg
                                                                      192
Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Gln Gln Arg
cca ggc caa tct cca agg cgc cta att tat aaa gtt tcc aac cga ttt
                                                                      240
Pro Gly Gln Ser Pro Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe
45
                    50
                                        55
                                                                      288
tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                65
                                    70
aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat tac
                                                                      336
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
                                                                      384
tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys
        95
                            100
                                                                      412
ctg gag atc aaa cgtgagtgga tccgcg
Leu Glu Ile Lys
    110
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                                                                       39
cctatttaca ttggtttctg cagaggccag gccaatctc
<210> 48
<211> 20
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic oligonucleotide
<400> 48
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<210> 49
<211> 412
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<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic plasmid
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<220>
<221> sig_peptide
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<222> (1)..(396)
<220>
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atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca
                                                                       48
Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
                                                                       96
ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc
Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc
                                                                      144
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
                            20
ctt gtg cac agt aat gga aag acc tat tta cat tgg ttt ctg cag agg
                                                                      192
Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Leu Gln Arg
                        35
                                             40
cca ggc caa tct cca agg cgc cta att tat aaa gtt tcc aac cga ttt
                                                                      240
Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe
                                         55
tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc
                                                                      288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                65
aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat tac
                                                                      336
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
                                 85
tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag
                                                                      384
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys
                            100
                                                 105
                                                                      412
ctg gag atc aaa cgtgagtgga tccgcg
Leu Glu Ile Lys
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110

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<210> 51
<211> 40
<212> DNA
<213> Artificial Sequence
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<400> 51
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ggagactggc ctggcttctg cagataccaa tgtaaatagg
<210> 52
<211> 412
<212> DNA
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      polynucleotide
<220>
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<222> (1)..(60)
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<221> CDS
<222> (1)..(396)
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atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca
                                                                        48
Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
-20
                    -15
                                                             -5
                                         -10
ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc
                                                                        96
Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
            -1 1
                                 5
                                                     10
gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc
                                                                       144
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
```

Leu V			_										-	_	_	192
cca g Pro (45		_			-		_				_			_		240
tct (_		_	_		_		-					-		288
aca o																336
tgc t Cys S																384
ctg q Leu (cgtg	gagtç	gga t	ccgo	eg								412
<210: <211: <212: <213: <220: <223:	> 54 > DN > Ar	IA tifi					cial	Sequ	ıence	e: Sy	/nthe	etic	pri	mer		
<400>			ctco	ectgo	ငင ငင္ခ	gtcac	ccct	gga	agago	ccgg	ccto	cato	ctc o	ctgc		54
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<400 gggt			gato	gatgt	t gg	gaatt	tatt	act	gcto	ctc						39
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<400> caggg			ıgaga	actga	ag to	catca	acaat	. ato	ccca	actg	gago	ctgg	J			48

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<211> 22
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<400> 56
                                                                       22
ccaacatcat cagcctccac cc
<210> 57
<211> 412
<212> DNA
<213> Artificial Sequence
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     polynucleotide
<220>
<221> sig_peptide
<222> (1)..(60)
<220>
<221> CDS
<222> (1)..(396)
<220>
<221> mat_peptide
<222> (61)..(396)
<400> 57
atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca
                                                                       48
Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
-20
                    -15
                                                             -5
ggc tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctg ccc
                                                                       96
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro
            -1 1
                                                     10
gtc acc cct gga gag ccg gcc tcc atc tcc tgc aga tca agt cag agc
                                                                      144
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
        15
                            20
ctt gtg cac agt aat gga aag acc tat tta cat tgg tat ctg cag aag
                                                                      192
Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Leu Gln Lys
    30
cca ggc cag tct cca aga ctc ctg atc tac aaa gtt tcc aac cga ttt
                                                                      240
Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe
45
                    50
tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc
                                                                      288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                65
aca ctg aaa atc agc agg gtg gag gct gat gtt gga att tat tac
                                                                      336
Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile Tyr Tyr
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80 85 90 tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag 384 Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys 95 100 ctg gag atc aaa cgtgagtgga tccgcg 412 Leu Glu Ile Lys 110 <210> 58 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide ccttcaccaa ccatgttatg cactggctgc gacaggcc 38 <210> 59 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide ataatgagaa gttcaagggc agagtcacga tgacctca 38 <210> 60 <211> 38 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 60 tgctagaggg ggttactatt cttacgacga ctggggcc 38 <210> 61 <211> 20 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Synthetic oligonucleotide <400> 61 ataacatggt tggtgaaggt 20

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<210> 62 <211> 20

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<212> DNA
<213> Artificial Sequence
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ccttgaactt ctcattatac
                                                                     . 20
<210> 63
<211> 19
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atagtaaccc cctctagca
                                                                       19
<210> 64
<211> 424
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      polynucleotide
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<222> (1)..(57)
<220>
<221> CDS
<222> (1)..(408)
<220>
<221> mat_peptide
<222> (58)..(408)
<400> 64
atg gaa tgg agc tgg ata ttt ctc ttc ctc ctg tca gga act gca ggt
                                                                       48
Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Ser Gly Thr Ala Gly
                -15
                                     -10
                                                         -5
gtc cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag
                                                                       96
Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
        -1 1
cct ggg gcc tca gtg cag gtt tcc tgt aag gca tct gga tac acc ttc
                                                                      144
Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
    15
                        20
acc aac cat gtt atg cac tgg ctg cga cag gcc cct gga caa ggg ctt
                                                                      192
Thr Asn His Val Met His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu
30
                    35
                                         40
```

25

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gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat
                                                                      240
Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
                50
                                                                      288
gag aag ttc aag ggc aga gtc acg atg acc tca gac acg tcc atc agc
Glu Lys Phe Lys Gly Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser
aca gcc tac atg gag ttg agc agt ctc aga tct gac gac acg gcc gtc
                                                                      336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val
        80
tat tat tgt gct aga ggg ggt tac tat tct tac gac gac tgg ggc caa
                                                                      384
Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln
    95
                        100
gca acc ctg gtc acc gtc tcc tca ggtgagtgga tccgcg
                                                                      424
Ala Thr Leu Val Thr Val Ser Ser
110
<210> 65
<211> 39
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic oligonucleotide
acagtaaggg aaacacctat ttacagtggt atctgcaga
                                                                       39
<210> 66
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ataggtgttt cccttactgt gcagaaggct ctgacttga
                                                                       39
<210> 67
<211> 412
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      polynucleotide
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<220>
<221> CDS
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<222> (1)..(396)
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<222> (61)..(396)
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                                                                       48
Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
                                        -10
ggc tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctg ccc
                                                                       96
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro
            -1 1
gtc acc cct gga gag ccg gcc tcc atc tcc tgc aga tca agt cag agc
                                                                      144
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
                            20
ctt ctg cac agt aag gga aac acc tat tta cag tgg tat ctg cag aag
                                                                      192
Leu Leu His Ser Lys Gly Asn Thr Tyr Leu Gln Trp Tyr Leu Gln Lys
                        35
cca ggc cag tct cca aga ctc ctg atc tac aaa gtt tcc aac cga ttt
                                                                      240
Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe
45
                    50
tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc
                                                                      288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
aca ctg aaa atc agc agg gtg gag gct gat gat gtt gga att tat tac
                                                                      336
Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile Tyr Tyr
            80
tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag
                                                                      384
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys
        95
                            100
ctg gag atc aaa cgtgagtgga tccgcg
                                                                      412
Leu Glu Ile Lys
   110
<210> 68
<211> 25
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<223> Description of Artificial Sequence: Synthetic primer
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                                                                       25
<210> 69
<211> 35
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic primer
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                                                                        35
<210> 70
<211> 44
<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer
<400> 70
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<210> 71
<211> 46
<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer
aaaaggaaaa gcggccgctc attatttgat ctccagcttg gtcccc
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<210> 72
<211> 15
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<221> CDS
<222> (1)..(15)
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ggt ggc gga ggt tcc
                                                                        15
Gly Gly Gly Ser
                5
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<211> 768
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<220>
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<220> <221> CDS <222> (1)(759)			
<220> <221> mat_peptide <222> (58)(759)			
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cct ggg gcc tca gtg Pro Gly Ala Ser Val 15			
acc aac cat gtt att Thr Asn His Val Ile 30			
gag tgg atg gga tat Glu Trp Met Gly Tyr 50			
gag aag ttc aag gad Glu Lys Phe Lys Asg 65		Thr Ser Asp Thr S	
aca gcc tac atg gag Thr Ala Tyr Met Glu 80			
tat tat tgt gct aga Tyr Tyr Cys Ala Arg 95			
gca acc ctg gtc aca Ala Thr Leu Val Thr 110			
atg act cag tct cca Met Thr Gln Ser Pro 130	Leu Ser Leu Pro		
tcc atc tcc tgc aga Ser Ile Ser Cys Arg 145		r Leu Val His Ser A	
acc tat tta cat tgg Thr Tyr Leu His Trp 160			
ctg atc tac aaa gtt	tee aae ega tti	tct ggt gtc cca g	ac aga ttc 624

Leu Ile Tyr Lys 175	Val Ser	Asn Arg 180	Phe Ser	Gly Val 185	Pro Asp	Arg Phe)
agc ggc agt ggg Ser Gly Ser Gly 190		_		_	_		Ĺ
gag gct gat gat Glu Ala Asp Asp							
ccg tac acg ttt Pro Tyr Thr Phe 225						tgagcg	768
<210> 74 <211> 768 <212> DNA <213> Artificia	l Sequen	ce		-			
<220> <223> Descripti polynucle		tificial	Sequenc	e: Synthe	etic pla	smid	
<220> <221> sig_pepti <222> (1)(57)	de						
<220> <221> CDS <222> (1)(759)						
<220> <221> mat_pepti <222> (58)(75							
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gtc gac tcc cag Val Asp Ser Gln -1 1							
		5			10		
cct ggg gcc tca Pro Gly Ala Ser 15		gtt tcc		_	gga tac		
Pro Gly Ala Ser	Val Gln	gtt tcc Val Ser 20	Cys Lys	Ala Ser 25 gcc cct	gga tac Gly Tyr gga caa	Thr Phe	± 192
Pro Gly Ala Ser 15 acc aac cat gtt Thr Asn His Val	Val Gln atg cac Met His 35	gtt tcc Val Ser 20 tgg ctg Trp Leu	Cys Lys cga cag Arg Gln tac aat	Ala Ser 25 gcc cct Ala Pro 40 gat ggt	gga tac Gly Tyr gga caa Gly Gln act aag	ggg ctt Gly Let 45	192 1 2 240

65 70 75

aca gcc Thr Ala														336
tat tat Tyr Tyr 95		-							_	_				384
gca acc Ala Thr 110			-	_	_						_			432
atg act Met Thr	_				_		_					_	_	480
tcc atc Ser Ile		s Arg												528
acc tat Thr Tyr														576
ctg atc Leu Ile 175														624
agc ggc Ser Gly 190		_			_			_			_		-	672
gag gct Glu Ala														720
ccg tac Pro Tyr		ne Gly									taat	gago	cg	768
<210> 7 <211> 4 <212> DI <213> A	4 NA	al Sec	quenc	ce										
<220> <223> D	escript	cion o	f Art	tific	cial	Sequ	ience	e: S <u>y</u>	ynthe	etic	pri	ner		

<400> 75

cgcggatccg gtggtggcgg atcgcaggtg cagctggtgc agtc

44

<210> 76

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

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<223> Description of Artificial Sequence: Synthetic oligonucleotide
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<210> 77
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide
<220>
<221> CDS
<222> (1)..(45)
<400> 77
ggt ggt ggt tcg ggt ggt ggt gga tcc ggt ggt ggc gga tcg
                                                                       45
Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
<210> 78
<211> 1515
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic plasmid
     polynucleotide
<220>
<221> sig_peptide
<222> (1)..(57)
<220>
<221> CDS
<222> (1)..(1506)
<220>
<221> mat_peptide
<222> (58)..(1506)
<400> 78
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                                                                       48
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
                -15
                                    -10
gtc gac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag
                                                                       96
Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
        -1 1
cct ggg gcc tca gtg cag gtt tcc tgt aag gca tct gga tac acc ttc
                                                                      144
Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
    15
acc aac cat gtt att cac tgg ctg cga cag gcc cct gga caa ggg ctt
                                                                     192
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	hr 0	Asn	His	Val	Ile	His 35	Trp	Leu	Arg	Gln	Ala 40	Pro	Gly	Gln	Gly	Leu 45		
								cct Pro										240
								acg Thr										288
		-				_	_	agt Ser 85		_		_	-	_	_	_	:	336
			-	_	-			tac Tyr				_	_				•	384
A								agt Ser										432
								ctg Leu										480
				-	-		_	cag Gln	-				_			_	!	528
								cag Gln 165									!	576
								cga Arg										624
S	-		_					gat Asp			_			_				672
								tat Tyr										720
								acc Thr									,	768
								ggt Gly 245									:	816
								aag Lys									;	864
								acc Thr									:	912

270	275		280	285	
		Gln Gly Leu	gag tgg atg gga Glu Trp Met Gly 295		960
Pro Tyr Asn A		_	gag aag ttc aag Glu Lys Phe Lys		1008
		_	aca gcc tac atg Thr Ala Tyr Met 330		1056
	Ser Asp Asp T		tat tat tgt gct Tyr Tyr Cys Ala 345		1104
			gca acc ctg gtc Ala Thr Leu Val 360		1152
		Asp Ile Val	atg act cag tct Met Thr Gln Ser 375		1200
Leu Pro Val T			tcc atc tcc tgc Ser Ile Ser Cys		1248
			acc tat tta cat Thr Tyr Leu His 410		1296
	Gly Gln Ser F		ctg atc tac aaa Leu Ile Tyr Lys 425		1344
			agc ggc agt ggg Ser Gly Ser Gly 440		1392
	-	Ser Arg Val	gag gct gat gat Glu Ala Asp Asp 455		1440
Tyr Tyr Cys S	_	_	ccg tac acg ttt Pro Tyr Thr Phe		1488
acc aag ctg g Thr Lys Leu G 480	-	caatgagcg			1515

<210> 79 <211> 1515

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid polynucleotide

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<220> <221> mat_peptide <222> (58)(1506)															
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	gac Asp														96
	ggg Gly 15														144
	aac Asn														192
	tgg Trp														240
	aag Lys														288
	gcc Ala														336
	tat Tyr 95														384
_	acc Thr	_	_		_	_	_						_		432
	act Thr														480
	atc Ile														528

						ctg Leu										576
						aac Asn 180										624
						act Thr										672
						att Ile						-			_	720
						ggg ggg										768
						tcc Ser										81.6
					-	gtg Val 260	_	-			_			_	-	864
						tac Tyr										912
						caa Gln										960
						aag Lys										1008
	_			_		tcc Ser		-		-		_		_	_	1056
						acg Thr 340										1104
						tgg Trp										1152
						gat Asp										1200
						gag Glu										1248
cag	agc	ctt	ctg	cac	agt	aag	gga	aac	acc	tat	tta	cag	tgg	tat	ctg	1296

Gln	Ser	Leu 400	Leu	His	Ser	Lys	Gly 405	Asn	Thr	Tyr	Leu	Gln 410	Trp	Tyr	Leu	
cag Gln	aag Lys 415	cca Pro	ggc Gly	cag Gln	tct Ser	cca Pro 420	aga Arg	ctc Leu	ctg Leu	atc Ile	tac Tyr 425	aaa Lys	gtt Val	tcc Ser	aac Asn	1344
cga Arg 430	ttt Phe	tct Ser	ggt Gly	gtc Val	cca Pro 435	gac Asp	aga Arg	ttc Phe	agc Ser	ggc Gly 440	agt Ser	Gly ggg	tca Ser	ggc Gly	act Thr 445	1392
								gtg Val								1440
								gtt Val 470								1488
	-		-	atc Ile		taat	gago	cg								1515
<211 <212 <213	<210> 80 <211> 39 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic primer															
)> 8(jagga		ccca	accat	g gg	gatgo	gagct	t gta	atcat	cc						39
<211 <212)> 81 -> 27 ?> DN 3> Ar	7 JA	lcial	l Sec	quenc	ce										
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<211 <212)> 82 .> 45 !> DN	i A	cial	. Sec	quenc	ee										
<220 <223		escri	.ptic	on of	Art	ific	cial	Sequ	ience	e: S <u>y</u>	/nthe	etic	prin	ner		
)> 82 agto		gtat	acgg	jc cg	gtgto	egtea	a gat	ctga	ıgac	tgct	c				45
<210)> 83	,														

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<211> 35 <212> DNA	
<213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Synthetic primer	
<400> 83 gggcaatgcc ttgagtggat gggatatatt tatcc	35
<210> 84 <211> 54 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Synthetic primer	
<400> 84 tcattatttg atctcaagct tggtcccgca gccaaacgtg tacggaacat gtgt	54
<210> 85 <211> 68 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Synthetic primer	
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acagtctc	68
<210> 86 <211> 35 <212> DNA <213> Artificial Sequence	
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<400> 86 gggcttctgc agataccaat gtaaataggt ctttc	35
<210> 87 <211> 36 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Synthetic primer	
<400> 87	36

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<210> 88
<211> 37
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic primer
<400> 88
tcattatttg atctcaagct tggtcccctg gccaaac
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<210> 89
<211> 708
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic polynucleotide
<400> 89
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tcctgtaagg catctggata caccttcacc aaccatgtta ttcactggct gcgacaggcc
                                                                      120
cccgggcaat gccttgagtg gatgggatat atttatcctt acaatgatgg tactaagtat
                                                                      180
aatgagaagt tcaaggacag agtcacgatg acctcagaca cgtccatcag cacagcctac
                                                                      240
atggagttga gcagtctcag atctgacgac acggccgtct attattgtgc tagagggggt
                                                                      300
tactatactt acgacgactg gggccaagca accctggtca cagtctcgag tggtggcgga
                                                                      360
ggttccgata ttgtgatgac tcagtctcca ctctccctgc ccgtcacccc tggagagccg
                                                                      420
gcctccatct cctgcagatc aagtcagagc cttgtgcaca gtaatggaaa gacctattta
                                                                      480
cattggtatc tgcagaagcc aggccagtct ccaagactcc tgatctacaa agtttccaac
                                                                      540
cgattttctg gtgtcccaga cagattcagc ggcagtgggt caggcactga tttcacactg
                                                                      600
aaaatcagca gggtggaggc tgatgatgtt ggaatttatt actgctctca aagtacacat
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gttccgtaca cgtttggctg cgggaccaag cttgagatca aataatga
                                                                      708
<210> 90
<211> 234
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polypeptide
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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20

Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His

2.5

Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met
35 40 45

Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe 50 55 60

Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln Ala Thr Leu 100 105 110

Val Thr Val Ser Ser Gly Gly Gly Ser Asp Ile Val Met Thr Gln 115 120 125

Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser 130 135 140

Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys Thr Tyr Leu 145 150 155 160

His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr 165 170 175

Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser 180 185 190

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp 195 200 205

Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr 210 215 220

Phe Gly Cys Gly Thr Lys Leu Glu Ile Lys 225 230

<210> 91

<211> 708

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

tcctgta cctgggd aatgaga atggagt tactata ggttccg	cagc aagg	tggtgcagtc catctggata ggcttgagtg tcaaggacag	caccttcacc	aaccatgtta	ttcactggct		60 120
aatgaga atggagt tactata ggttccg	rcaag	ggcttgagtg				gcgacaggcc	120
aatgaga atggagt tactata ggttccg			gatgggatat	atttatcctt			
atggagt tactata ggttccg gcctcca	aagt	tcaaggacag			acaatgatgg	tactaagtat	180
tactata ggttccg gcctcca		333	agtcacgatg	acctcagaca	cgtccatcag	cacagcctac	240
ggttccg	ttga	gcagtctcag	atctgacgac	acggccgtat	actattgtgc	tagagggggt	300
gcctcca	actt	acgacgactg	gggctgcgca	accctggtca	cagtctcgag	tggtggcgga	360
	gata	ttgtgatgac	tcagtctcca	ctctccctgc	ccgtcacccc	tggagagccg	420
cattggt	atct	cctgcagatc	aagtcagagc	cttgtgcaca	gtaatggaaa	gacctattta	480
	tatc	tgcagaagcc	cgggcagtgc	ccaagactcc	tgatctacaa	agtttccaac	540
cgatttt	tctg	gtgtcccaga	cagattcagc	ggcagtgggt	caggcactga	tttcacactg	600
aaaatca		gggtggaggc	tgatgatgtt	ggaatttatt	actgctctca	aagtacacat	660
gttccgt	agca		ggggaccaag	cttgagatca	aataatga		708

<210> 92

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 92

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala 1 5 10 15

Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His 20 25 30

Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met 35 40 45

Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe 50 60

Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Cys Ala Thr Leu

<211> 234

<212> PRT

<213> Artificial Sequence

100 105 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln
115 120 125

Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser 130 135 140

Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys Thr Tyr Leu 145 150 155 160

His Trp Tyr Leu Gln Lys Pro Gly Gln Cys Pro Arg Leu Leu Ile Tyr
165 170 175

Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser 180 185 190

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp 195 200 205

Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr 210 215 220

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys 225 230

<210> 93

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 93

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly -15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu 30 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Gly Thr Leu Val Thr Val Ser Ser 110 115

<210> 94

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 94

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly
-15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu 30 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Thr Ser 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln
95 100 105

Gly Thr Leu Val Thr Val Ser Ser 110 115

<210> 95

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid polypeptide

<400> 95

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly
-15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu 30 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Thr Ser 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Gly Thr Leu Val Thr Val Ser Ser 110 115

<210> 96

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 96

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Ser Gly Thr Ala Gly
-15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu 30 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Asp Lys Val Thr Met Thr Ser Asp Thr Ser Thr Ser 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Gly Thr Leu Val Thr Val Ser Ser 110 115

<210> 97

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 97

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Ser Gly Thr Ala Gly
-15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu 30 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Leu Thr Ser Asp Thr Ser Thr Ser 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Gly Thr Leu Val Thr Val Ser Ser 110 115

<210> 98

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 98

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly -15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu 30 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Thr Ser 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Gly Thr Leu Val Thr Val Ser Ser 110 115

<210> 99

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 99

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Ser Gly Thr Ala Gly
-15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu 30 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Ala Thr Leu Val Thr Val Ser Ser 110 115

<210> 100

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 100

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
-20 -15 -10 -5

Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro -1 1 5 10

Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 15 20 25

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Gln Gln Arg 30 35 40

Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe 45 50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe 65 70 75

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr 80 85 90

Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys 95 100 105

Leu Glu Ile Lys 110

<210> 101

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 101

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro -20 -15 -10 -5

Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
-1 1 5 10

Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 15 20 25

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Gln Gln Arg 30 35 40 Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe 45 50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe 65 70 75

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr 80 85 90

Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys 95 100 105

Leu Glu Ile Lys 110

<210> 102

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 102

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro -20 -15 -10 -5

Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
-1 1 5 10

Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 15 20 25

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Gln Gln Arg 30 35 40

Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe 50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe 65 70 75

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Phe 80 85 90

Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys

95 100 105

Leu Glu Ile Lys 110

<210> 103

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 103

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro -20 -15 -10 -5

Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro -1 1 5 10

Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 15 20 25

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Gln Gln Arg 30 35 40

Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe 50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe 65 70 75

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr 80 85 90

Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys 95 100 105

Leu Glu Ile Lys 110

<210> 104

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

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<400> 104

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro -20 -15 -10 -5

Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
-1 1 5 10

Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 15 20 25

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Leu Gln Arg 30 35 40

Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe 45 50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr 80 85 90

Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys 95 100 105

Leu Glu Ile Lys 110

<210> 105

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 105

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
-20 -15 -10 -5

Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro
-1 1 5 10

Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 15 20 25

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Leu Gln Lys

30 35 40

Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe 45 50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr 80 85 90

Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys 95 100 105

Leu Glu Ile Lys 110

<210> 106

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 106

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro -20 -15 -10 -5

Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro -1 1 5 10

Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser 15 20 25

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Leu Gln Lys $30 \hspace{1.5cm} 35 \hspace{1.5cm} 40$

Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe 45 50 55 60

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe 65 70 75

Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile Tyr Tyr 80 85 90

```
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys 95 100 105
```

110

<210> 107 <211> 136 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 107

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Ser Gly Thr Ala Gly
-15 -10 -5

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Met His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu 30 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Gly Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln 95 100 105

Ala Thr Leu Val Thr Val Ser Ser 110 115

<210> 108 <211> 132

<211> 132 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid

```
polypeptide
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```
<400> 108
Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro
            -1 1
                                5
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
                            20
Leu Leu His Ser Lys Gly Asn Thr Tyr Leu Gln Trp Tyr Leu Gln Lys
Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe
                                       55
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile Tyr Tyr
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys
                            100
Leu Glu Ile Lys
   110
<210> 109
<211> 5
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic peptide
<400> 109
Gly Gly Gly Ser
               5
<210> 110
<211> 253
<212> PRT
<213> Artificial Sequence
```

<220>

polypeptide

<223> Description of Artificial Sequence: Synthetic plasmid

<400> 110

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
-15 -10 -5

Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu 30 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Ala Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Asp Ile Val 110 115 120 125

Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala 130 135 140

Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys 145 150 155

Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu 160 165 170

Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe 175 180 185

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val 190 195 200 205

Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val 210 215 220 Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys 225 230

<210> 111

<211> 253

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 111

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
-15 -10 -5

Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Met His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu 30 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Gly Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln 95 100 105

Ala Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Asp Ile Val 110 125

Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala 130 135 140

Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser Lys Gly Asn 145 150 155

Thr Tyr Leu Gln Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu 160 165 170

Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe 175 180 185

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val 190 200 205

Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val 210 215 220

Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys 225 230

<210> 112

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 112

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser 1 5 10 15

<210> 113

<211> 502

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 113

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly -15 -10 -5

Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu 30 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn
50 55 60

Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser

65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln 95 100 105

Ala Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Asp Ile Val 110 125 120 125

Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala 130 135 140

Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys 145 150 155

Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu 160 165 170

Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe 175 180 185

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val 190 195 200 205

Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val \$210\$ \$25\$ \$220

Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly 225 230 235

Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gln Val Gln Leu 240 245 250

Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Gln Val 255 260 265

Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His Val Ile His Trp 270 275 280 285

Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Tyr Ile Tyr 290 295 300

Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys Asp Arg Val 305 310 315

Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu Leu Ser 320 325 330

Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Gly 335 340 345

Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln Ala Thr Leu Val Thr Val Ser 350 360 365

Ser Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser 370 375 380

Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser 385 390 395

Gln Ser Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Leu 400 405 410

Gln Lys Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn 415 420 425

Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr 430 435 440 445

Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile 450 455 460

Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly
465 470 475

Thr Lys Leu Glu Ile Lys 480

<210> 114

<211> 502

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic plasmid
 polypeptide

<400> 114

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
-15 -10 -5

Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1 5 10

Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe 15 20 25

Thr Asn His Val Met His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu 30 35 40 45

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn 50 55 60

Glu Lys Phe Lys Gly Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val 80 85 90

Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln 95 100 105

Ala Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Asp Ile Val 110 125 120 125

Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala 130 135 140

Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser Lys Gly Asn 145 150 155

Thr Tyr Leu Gln Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu 160 165 170

Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe 175 180 185

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val 190 200 205

Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val 210 215 220

Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly 225 230 235

Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gln Val Gln Leu 240 245 250

Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Gln Val 255 260 265

Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His Val Met His Trp 270 275 280 285

Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Tyr Ile Tyr 290 295 300

Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys Gly Arg Val 305 310 315

Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu Leu Ser 320 325 330

Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Gly 335 340 345

Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln Ala Thr Leu Val Thr Val Ser 350 365

Ser Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser 370 375 380

Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser 385 390 395

Gln Ser Leu Leu His Ser Lys Gly Asn Thr Tyr Leu Gln Trp Tyr Leu 400 405 410

Gln Lys Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn 415 420 425

Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr 430 435 440 445

Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile 450 455 460

Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly
465 470 475

Thr Lys Leu Glu Ile Lys 480

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<210> 115
<211> 4
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic peptide
<400> 115
Gly Gly Gly Ser
<210> 116
<211> 4
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic peptide
<400> 116
Ser Gly Gly Gly
<210> 117
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic peptide
<400> 117
Ser Gly Gly Gly
                5
<210> 118
<211> 6
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic peptide
<400> 118
Gly Gly Gly Gly Ser
<210> 119
<211> 6
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic peptide
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3

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<400> 119
Ser Gly Gly Gly Gly
<210> 120
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic peptide
<400> 120
Gly Gly Gly Gly Gly Ser
<210> 121
<211> 7
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic peptide
<400> 121
Ser Gly Gly Gly Gly Gly
<210> 122
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic peptide
<220>
<221> MOD_RES
<222> (5)..(5)
<223> Any amino acid
<220>
<221> MOD_RES
<222> (11)..(12)
<223> Any amino acid
<400> 122
Trp Tyr Leu Gln Xaa Pro Gly Gln Ser Pro Xaa Xaa Leu Ile Thr
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